

What is claimed is:

1. A composite pipe formed by a metallic pipe with inner lining of plastic material resistant to corroding agents,
5 wherein the inner lining is constituted by a prefabricated plastic material lamina, curved to a tubular shape to adapt it to the inner surface of the metallic pipe, its longitudinal edges abutting or separated by a small width joint; the curved lamina is placed into the metallic pipe adhered to its inner
10 surface, the joint between said longitudinal edges is filled by means of a filler compatible with the plastic material of the lamina and the material of the metallic pipe, and resistant to the fluids to be conveyed through the composite pipe.
- 15 2. A method to manufacture a composite pipe formed by a metallic pipe with inner lining of plastic material according to claim 1, said method comprising the preparation of a flexible plastic material lamina with a width equal to or slightly less than the inner perimeter of the metallic pipe,
20 transversally curved with respect to its width, with a curvature radius less than the curvature radius of the metallic pipe, its longitudinal edges abutting or overlapping; inserting the curved plastic material lamina into the metallic pipe and expanding it until the outer surface of the curved
25 plastic material lamina is adhered to the inner surface of the metallic pipe, filling the joint between longitudinal edges of the curved plastic material lamina with a filler.
3. The method according to claim 2, wherein the curved plastic material lamina is prepared from a plane plastic material
30 sheet, and coiled to a substantially cylindrical shape.

4. The method according to claim 1, wherein the curved plastic material lamina is prepared longitudinally slitting a plastic material pipe following one of its generatrix.

5 5. The method of claim 2, wherein the filler material is a curable composition applied in fluid state, and left to cure after application.

6. The method of claim 5, wherein the filler material seam applied at the joint of the curved plastic material lamina is smoothed by means of a smoothing roller.

10 7. The method of claim 2, wherein the filler material is a fusible plastic material, compatible with the material of the curved plastic material lamina, being heated to melting point and pressed against the edges of the plastic material lamina until welding of same, leaving the welding seam to cool until
15 solidifying.

8. The method of claim 2, wherein the curved plastic material lamina is formed from a plane plastic band, uncoiled from a plastic band coil and transversally curved until obtaining a circular slit pipe.

20 9. An expanding tool to carry out the method according to any of claims 2 thru 8, said expanding tool comprising a cart with less height and width than the inner diameter of the curved plastic material lamina, provided with wheels that run over the lower portion of the inner surface of the plastic material
25 pipe; the cart is connected to a longitudinal shaft protruding from one of the pipe's ends, which allows the cart movement; a number of radial expansion rollers evenly distributed, mounted through respective unfolding supports, and expanding members on the cart or the shaft.

10. The expanding tool of claim 9, wherein the cylinders
unfolding supports are constituted by respective tilting arms
with an expanding roller at one end, and hinged to the cart or
shaft at the opposite end, the expanding members being a
5 spiral spring.

11. The tool of claim 10, wherein the expanding member is a
hydraulic cylinder.

12. The tool according to any of claims 9 to 11, comprising at
least two pairs of expanding cylinders, each pair arranged
10 vertically and horizontally, respectively.

13. The tool according to claim 12, wherein the lower roller
has a peripheral central rim which engages in the slit of the
plastic material pipe, to serve as a guide.

14. The tool according to any of claims 9 to 13, wherein the
15 cart has, in its lower part, an injector of fluid filler
material aligned with the longitudinal slit of the slit
plastic material pipe.

15. The tool of claim 14, wherein the cart has at the back of
the filler material injector, seen in the direction of
20 movement of the cart, a smoothing cylinder to smooth the
resulting filler seam.

16. The tool according to any of claims 9 to 13, wherein the
cart has, in its lower part, a welding arrangement for
applying fused plastic material and a feeder for plastic
25 material welding rods.

17. Use of a composite pipe according to claim 1 and/or
manufactured by the method of claims 2 to 8, for conveying
chemical and/or mechanically aggressive fluids.